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Title of Document:	Policy for Management of Occupational Exposures of Health Care Personnel to Potential Bloodborne Pathogens
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Reference: Updated U.S. Public Health Services Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV and Recommendations for Post-exposure Prophylaxis June 29, 2001 MMWR

Purpose:

DDSN must make available to its' Health-care personnel (HCP) (e.g., all employees, students, contractors, attending clinicians, public safety workers, or volunteers) a system that includes written protocols for prompt reporting, evaluation, counseling, treatment and follow-up of occupational exposures that might place HCP at risk for acquiring a bloodborne infection. This policy is based on U.S. Public Health Service Guidelines for the management of HCP who have occupational exposure to blood or other body fluids that might contain Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) or Human Immunodeficiency Virus (HIV).

All DDSN facilities must assure that these guidelines are followed regardless of who handles the actual exposure incident. This includes healthcare facilities off the facility campus. To comply with the OSHA Bloodborne Pathogen Standard, the final responsibility to make sure the procedure is correctly followed is assumed by the facility where the exposure occurs.

Occupational exposures should be considered urgent medical concerns to ensure timely post-exposure management and administration of HBIG, Hepatitis B vaccine and for HIV post-exposure prophylaxis (PEP).

General:

Hepatitis B virus, Hepatitis C virus and HIV are all similarly transmitted in blood or other potentially infectious material (OPIM). They are referred to as bloodborne pathogens. All can be transmitted through percutaneous injury (e.g., needlestick or cut with a sharp object), open wound, non-intact skin (e.g., chapped, abraded, weeping) or mucous membrane contact with infectious blood or OPIM. HBV is more likely to be contracted than HIV. Exposure prevention remains the primary strategy for reducing occupational bloodborne pathogen infections; however occupational exposures will continue to occur.

Policy:

I. Potentially Infectious Materials

A. The Center for Disease Control and Prevention (CDC) has defined the following body fluids as potentially infectious for bloodborne pathogens:

- blood
- body fluids containing visible blood
- semen
- vaginal secretions
- tissues
- cerebrospinal fluid
- synovial fluid
- pleural fluid
- peritoneal fluid
- pericardial fluid
- amniotic fluid.

B. The following fluids are not considered infectious for blood borne pathogens unless visible blood is present:

- feces
- nasal secretions
- sputum
- sweat
- tears
- vomitus
- saliva
- urine

II. Factors to Consider in Assessing the Need for Follow-up of Occupational Exposures

A. Type of exposure

- percutaneous (sharps) injury
- mucous membrane exposure
- non-intact skin exposure
- bites resulting in blood exposure to either person involved

B. Type and amount of fluid/tissue

- blood
- body fluids containing blood

- potentially infectious fluids or tissue (semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, pericardial and amniotic fluids)
- direct contact with concentrated virus (e.g., in a lab)

C. Infectious status of the source

- Presence of HBsAg
- Presence of HCV antibody
- Presence of HIV antibody

D. Susceptibility of the exposed person

- Hepatitis B vaccine and vaccine response status
- HBV, HCV, and HIV immune status

III. Exposure Management for Health Care Personnel (HCP)

A. Treatment of the exposure site

1. wash exposed area immediately with soap and water
2. flush mucous membranes with water
3. administer first aid as needed

B. Informed consent for HIV/HBV/HCV testing (Appendix A)

1. Before testing for HIV/HBV/HCV is initiated, the HCP must sign an informed consent.
2. Informed consent for consumers who are source persons will be obtained prior to testing for HIV when possible. Informed consent is not required however for HIV testing of the source person as per South Carolina Law (SC# 44-29-2300) if the exposed person is an HCP.

C. Complete the Employee Blood/Body Fluid Exposure Summary form (Appendix B)

D. Evaluation of the occupational exposure source

1. Known sources
 - Test known sources for HBsAg, anti-HCV and HIV antibody
 - Direct virus assays for routine screening of source patients are not recommended
 - Consider using a rapid HIV antibody test

- If the source person is not infected with a bloodborne pathogen, baseline testing or further follow-up of the exposed person is not necessary
 - For known sources whose infectious status remains unknown (e.g., the source person refuses testing), consider medical diagnoses, clinical symptoms and history of risk behaviors
 - Do not test discarded needles for bloodborne pathogens
2. Unknown Sources
- For unknown sources, evaluate the likelihood of exposure to a source at high risk for infection
 - Consider the likelihood of bloodborne pathogens infection among the patients in the exposure setting

E. Management of Exposures to the Hepatitis B Virus (see Appendix C)

F. Management of Exposures to Hepatitis C (see appendix D)

G. Management of Exposures to HIV

1. HCP exposed to HIV should be evaluated within hours after exposure
2. HCP should be tested for HIV at baseline to establish their infection status at the time of exposure
3. If the source person is seronegative for HIV, baseline testing or further follow-up of the exposed person normally is not necessary
4. If the HCP is considered for HIV Post Exposure Prophylaxis (PEP), the evaluation should include current medications being taken and any underlying medical conditions or circumstances (pregnancy, breast feeding, renal or hepatic disease) that might influence drug selection
5. PEP is recommended after HCP exposure to a source person with a known HIV infection or a source person who is likely HIV infected (see Appendix E, from tables 4 & 5 MMWR June 29, 2001)
6. PEP should be decided on a case-by-case basis if the source person's infection status is unknown at the time of exposure (see Appendix E, from tables 4&5 MMWR June 29, 2001)
7. Situations for which expert consultation for HIV PEP is advised (see Appendix F)
8. PEP is potentially toxic. The HCP should be monitored for drug toxicity by testing at baseline and again two weeks after starting PEP. This will be done by the physician ordering the PEP.
 - a. CBC, renal & hepatic function tests
 - b. If a protease inhibitor is used monitor for hyperglycemia
 - c. If IDV is used, monitor for crystalluria, hematuria, hemolytic anemia and hepatitis

IV. Confidentiality

- A. Confidential post-exposure management will be conducted on any person exposed to blood borne pathogens.
- B. Confidential post-exposure management records for employees will be maintained for the duration of employment plus 30 years per OSHA regulation.

V. HIV counseling pre-test and post-test

- A. All persons must be counseled before and after receiving HIV-testing.
- B. The exposed person will receive counseling and support from appropriate SCDDSN staff initially and as needed during the post exposure management phase.
- C. The health care professional's written opinion of the exposure incident must be provided to the exposed employee within 15 working days of the incident.
(Appendix G)

VI. State Accident Fund

- A. Covered expenses that result from occupational exposures will be paid by State Accident Fund.
- B. State Accident Fund is entitled to documentation, lab results, progress notes, etc., to adequately verify claims and expenses. The requested information will be provided in a confidential manner.

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Associate State Director, Operations
(Originator)

Stanley J. Butkus, Ph.D.
State Director
(Approved)

Attachments follow:

Health Care Worker

CONSENT FOR HIV/HBV/HCV TESTING

- I hereby consent to have the HIV ____, HBV ____, HCV ____ test performed upon:

(print name)

- I understand the test for HIV is not a diagnostic test for AIDS
- I have been advised of the implications of the test and have been given the opportunity to ask questions.
- I understand that _____ (facility) will maintain confidentiality of the test results, medical records and reportable information as provided for in accordance with SCDDSN policy.

Signature

Social Security #

Date

Witness

Date

Employee Blood/Body Fluid Exposure & Testing Summary

Employee Name: _____ Job title: _____

Work area: _____ SS#: _____ Employed: () Full time () Part time () contract

Completed Hepatitis B vaccine? Yes ☐ No ☐ Result of previous Anti-HBs Pos ☐ Neg ☐ N/A ☐Exposure History: (complete, circle or check applicable items throughout)

Date and Time of Exposure: _____

Wound Care/First Aid Administered: _____

Was applicable personal protective equipment (i.e. gloves, masks, etc.) used? Yes ☐ No ☐

Type of Exposure:

- A. Sharp: needle ☐ lancet ☐ broken glass ☐ other ☐ (describe): _____
 Clean (sterile) ☐ Contaminated with blood/body fluids ☐
 Visible blood on sharp? Yes ☐ No ☐ Used for vascular access? Yes ☐ No ☐
 Deep injury? Yes ☐ No ☐ Blood injected into HCP? Yes ☐ No ☐
- B. Mucous Membrane: eye ☐ mouth ☐ nose ☐
- C. Body Fluid: blood ☐ vaginal secretions ☐ sputum ☐ vomitus ☐ urine ☐ wound drainage ☐
 other ☐ _____
- D. Human Bite (describe): _____
- E. Open Wound Contamination (describe): _____
- F. Other (describe): _____

Source Person:

Name: _____ SS#: _____

Clinical diagnosis and blood borne pathogen risk factors: _____

Circle if person is known to have: HIV-AIDS _____ Hepatitis B _____ Hepatitis C _____

Date of source person testing at time of exposure incident: _____ HIV test: pos__ neg__

HBsAg: pos__ neg__ HCV Antibody: pos__ neg__

Employee/HCP Counseling:

risk of acquiring blood borne pathogen from occupational exposure
 report and seek medical evaluation for any acute flu-like illness
 information and assistance re: HIV Post- Exposure Prophylaxis (PEP) Protocol
 potential for baseline and follow-up serologic testing (see next page)
 observe "safer sex" practices for six months following exposure from high-risk source
 identify and correct work practices, engineering/equipment controls, or PPE problems to avoid recurrence

Is employee starting HIV PEP medications? Yes ☐ No ☐

Employee Signature: _____ Date: _____

Employee Health Nurse/Designee Signature: _____ Date: _____

SCDDSN Health Care Personnel (HCP) Blood/Body Fluid Post-Exposure Testing Schedule:

Baseline and follow-up testing of exposed HCP, as outlined below, is indicated **ONLY** if the source patient:

a) tests positive for any of the following blood borne pathogens **or** b) serostatus is unknown **or** c) identity is unknown

The Employee Health Nurse (EHN) should omit HCP testing for a specific pathogen if the source person tests negative or is known to be negative for that specific pathogen (i.e. negative HBsAg for HBV) at the time of exposure or within the previous month (unless the person has a history of recent high risk behaviors and may be in the window period for HIV or HCV [1-6 months], in which case medical consultation is necessary). HCP testing for syphilis (RPR) at baseline and 6 week follow-up is done **ONLY** if source person is documented to have untreated primary or secondary syphilis at the time of the HCP exposure, and the HCP receives syphilis post-exposure prophylaxis (i.e., 2.4 million units L.A. Bicillin).

When indicated, test HCP for : Schedule: (document date drawn)	HIV: (also see Appendix E, Post Exposure Prophylaxis Protocol for additional test for HCPs on HIV PEP; obtain medical consult	Hepatitis C Virus(HCV)	Hepatitis B Virus (HBV) (baseline & follow-up testing <u>unnecessary</u> if HCP has documented +Anti-HBs
Baseline* Date: _____ Result: _____	HIV Antibody pos _____ neg _____	HCV antibody pos _____ neg _____ ALT= _____ normal M: 0-40, F: 0-31	HBsAg & HBsAb (<u>only if</u> HCP is a known “non responder” to Hepatitis B vaccine or if response is unknown)• pos _____ neg _____
6 weeks:* Date: _____ Result: _____	HIV Antibody pos _____ neg _____		HBsAg pos _____ neg _____
12 weeks:* Date: _____ Result: _____	HIV Antibody pos _____ neg _____		HBsAg pos _____ neg _____
6 months:* Date: _____ Result: _____	HIV Antibody pos _____ neg _____	HCV Antibody pos _____ neg _____ Alt _____	HbsAg Date: _____ pos _____ neg _____
12 months:* Date: _____ Result: _____	HIV Antibody pos _____ neg _____	HCV Antibody pos _____ neg _____ Alt _____	No Test

* Employee Health Nurse may perform additional tests periodically (i.e., HIV at 18 weeks and/or 9 months) if indicated for medical management or if recommended by medical consultant (i.e., if HCP is symptomatic or for reassurance if HCP is anxious)

- If source patient documented to have a +HBsAg, AND IF HCP has never had Hepatitis B vaccine series, give one dose of HBIG and begin the Hepatitis B vaccine series. If the HCP is a known non-responder (i.e. has had negative anti-HBs after complete Hepatitis B vaccination series, even with up to 3 boosters) then give HCP two doses of HBIG one month apart. If the HCP received only 3 vaccinations previously and has no documented Anti-HBs, give HBIG once, plus initiate revaccination series. See CDC, MMWR, Vol.46, No.RR-18, 12-26-97, p.23. Retest HBsAg as above and Anti-HBs 1-2 months after completion of series.

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Obtain medical consultation immediately if any test is reported positive/abnormal.

Continuation Notes: _____

Management of Exposure to the Hepatitis B Virus

Treatment of Exposed Person When:			
Vaccination and Antibody response status of exposed workers*	Source person is HBsAg-Positive	Source person is HBsAg-Negative	Source person is unknown or not available for testing
Exposed person is unvaccinated	HBIG x1*** and initiate HB vaccine series	Initiate HB vaccine series	Initiate HB vaccine series
Exposed person is a previously vaccinated known responder (adequate level of immunity ≥ 10 mIU/ml)	No treatment	No treatment	No treatment
Exposed person is a known non-responder (inadequate level of immunity < 10 mIU/ml)	HBIG x 1 plus initiate HB revaccination or HBIG x 2 ****	No treatment	If known high-risk source, treat as if source were HBsAg-positive.
Exposed person has antibody response unknown	Test exposed person for anti-HBs: 1. If adequate, no treatment. 2. If inadequate, HBIG ***x1 plus HB vaccine booster dose.**	No treatment	Test exposed person for anti-HBs: 1. If adequate, no treatment 2. If inadequate, initiate HB revaccination

- * 1. Persons who have previously been infected with HBV are immune to reinfection and do not need postexposure prophylaxis
- ** 2. HB vaccine (Hepatitis B) dose 20 mcg/1ml, I.M. in deltoid; 1st dose within 7 days; 2nd dose in one month; 3rd dose in six months. If booster dose is indicated, give 1 cc of HB vaccine I.M. in deltoid.
- *** 3. HBIG (Hepatitis B immune Globulin) must be given within 24 hours, or as soon as possible within 7 days of exposure; HBIG dose is 0.06 ml/kg of body weight in gluteal site; if greater than 3 ml, divide dose and administer both right and left sites. Give the first dose initially and repeat the second dose in 30 days.
- **** 4. The option of giving one dose of HBIG and reinitiating the vaccine series is preferred for nonresponders who have not completed a second 3 dose vaccine series. For persons who previously completed a second vaccine series but failed to respond, two doses of HBIG are preferred.

MANAGEMENT OF EXPOSURE TO THE HEPATITIS C VIRUS

- For the source, perform testing for anti-HCV
- For the exposed person to an HCV+ person:
 - * perform baseline testing for **anti-HCV** and **ALT** and
 - * perform follow-up testing (e.g., at 4-6 months) for anti-HCV and ALT activity (if earlier diagnosis of HCV infection is desired, testing for HCV RNA may be performed at 4-6 weeks)
- Confirm all anti-HCV results reported positive by enzyme immunoassay using supplemental anti-HCV testing (e.g., recombinant immunoblot assay {RUBA})
- If HCV infection is detected, refer the HCP to a specialist immediately for early medical management.

Management of Exposure to the HIV Virus

Recommended HIV Post-Exposure Prophylaxis for Percutaneous

Injuries

-

Infection status of source

Exposure Type	HIV+ Class 1*	HIV+ Class 2*	Source's HIV status unknown**	Unknown source***	HIV negative
Less severe****	Recommend basic 2 drug PEP	Recommend expanded 3 drug PEP	Generally, no PEP warranted; however consider basic 2 drug PEP***** for source w/HIV Risk factorsδ	Generally, no PEP warranted; however, consider basic 2 drug PEP in settings where exposure to HIV infected persons is likely	No PEP
More severeδ δ	Recommend expanded 3 drug PEP	Recommend expanded 3 drug PEP	Generally, no PEP warranted; however, consider basic 2 drug PEP***** for source w/HIV risk factorsδ	Generally, no PEP warranted; however consider basic 2 drug PEP in settings where exposure to HIV infected persons is likely	No PEP

- * **HIV+ Class 1 = asymptomatic HIV infection or known low viral load (e.g., <1500 RNA copies/ml).**
HIV+ Class 2= symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load. If drug resistance is a concern, obtain expert consultation. Initiation of postexposure prophylaxis (PEP) should not be delayed pending expert consultation, and because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.
- ** **Source of unknown HIV status (e.g., deceased source person with no samples available for testing)**
- *** **Unknown source (e.g., a needle from a sharps disposal container)**
- **** **Less severe (e.g., solid needle and superficial injury)**
- ***** **The designation “consider PEP” indicates that PEP is optional and should be based on an individualized decision between the exposed person and the treating clinician**
- δ **If PEP is offered and taken and the source is later determined to be HIV- negative, PEP should be discontinued**
- δδ **More severe (e.g., large-bore hollow needle, deep puncture, visible blood on the device, or needle used in patient's artery or vein)**

Recommended HIV Post-Exposure Prophylaxis for Mucous**Membrane****Exposures and Nonintact* Skin Exposures****Infection status of source**

Exposure Type	HIV+ Class 1*	HIV+ Class 2*	Source's HIV status unknown****	Unknown source*****	HIV negative
Small volume***	Consider basic 2 drug PEP δ	Recommend basic 2 drug PEP	Generally, no PEP warranted; however consider basic 2 drug PEP δ for source w/HIV Risk factors $\delta\delta\delta$	Generally, no PEP warranted; however, consider basic 2 drug PEP δ in settings where exposure to HIV infected persons is likely	No PEP
Large volume δ	Recommend basic 2 drug PEP	Recommend expanded 3 drug PEP	Generally, no PEP warranted; however, consider basic 2 drug PEP δ for source w/HIV risk factors $\delta\delta\delta$	Generally, no PEP warranted; however consider basic 2 drug PEP δ in settings where exposure to HIV infected persons is likely	No PEP

- * For skin exposures, follow-up is indicated only if there is evidence of compromised skin integrity (e.g., dermatitis, abrasion, or open wound)
- ** HIV+ Class 1 = asymptomatic HIV infection or known low viral load (e.g., <1500 RNA copies/ml).
HIV+ Class 2 = symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load. If drug resistance is a concern obtain expert consultation. Initiation of postexposure prophylaxis (PEP) should not be delayed pending expert consultation, and because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.
- *** small volume (i.e. a few drops)
- **** Source of unknown HIV status (e.g., deceased source person with no samples available for testing)
- ***** Unknown source (e.g., splash from inappropriately disposed blood)
- δ The designation, “consider PEP”, indicates that PEP is optional and should be based on an individualized decision between the exposed person and the treating clinician
- $\delta\delta$ Large volume (i.e., major blood splash)
- $\delta\delta\delta$ If PEP is offered and taken and the source is later determined to be HIV negative, PEP should be discontinued.

Situations for which expert consultation for HIV postexposure prophylaxis is advised

- Delayed (i.e., later than 24-36 hrs.) exposure report
 - the interval after which there is no benefit from postexposure prophylaxis (PEP) is undefined
- Unknown source (i.e., needle in sharps disposal container or laundry)
 - decide use of PEP on a case by case basis
 - consider the severity of the exposure and the epidemiologic likelihood of HIV exposure
 - do not test needles or other sharp instruments for HIV
- Known or suspected pregnancy in the exposed person
 - does not preclude the use of optimal PEP regimes
 - do not deny PEP solely on the basis of pregnancy
- Resistance of the source virus to antiretroviral agents
 - influence of drug resistance on transmission risk is unknown
 - selection of drugs to which the source person's virus is unlikely to be resistant is recommended, if the source person's virus is known or suspected to be resistant to ≥ 1 of the drugs considered for the PEP regimen
 - resistance testing of the source person's virus at the time of the exposure is not recommended
- Toxicity of the initial PEP regimen
 - adverse symptoms, such as nausea and diarrhea are common with PEP
 - symptoms often can be managed without changing the PEP regimen by prescribing antimotility and /or antiemetic agents
 - modification of dose intervals (i.e., administering a lower dose of drug more frequently throughout the day, as recommended by the manufacturer), in other situations might help alleviate symptoms

Attachment G

Health Care Professional's Written Opinion for Employees

Date: _____

Employee Name: _____

Social Security #: _____

Dear _____:

The report of your accident which occurred on _____ has been evaluated. It is required by OSHA that a copy of this written opinion be given to you within 15 days of completing the exposure evaluation.

The following statements that are marked apply to your accident:

_____ Hepatitis B vaccination is indicated

_____ Hepatitis B vaccination is not indicated

Reasons:

In regards to your post-exposure evaluation and follow-up:

1. You have been informed of the results of the evaluation.
2. You have been informed of any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

Comments:

A copy of this written opinion is kept with your exposure record. *All findings and/or diagnoses shall remain confidential.*